



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,383	06/27/2003	Matthew Ward	WARD-01000US1	7967
23910	7590	07/20/2005	EXAMINER	
FLIESLER MEYER, LLP FOUR EMBARCADERO CENTER SUITE 400 SAN FRANCISCO, CA 94111			SAWHNEY, HARGOBIND S	
			ART UNIT	PAPER NUMBER
			2875	

DATE MAILED: 07/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/608,383	WARD, MATTHEW	
	Examiner	Art Unit	
	Hargobind S. Sawhney	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. The amendment and formal drawings filed on May 9, 2005 have been entered.

Accordingly:

- Claims 6, 7, 20 and 29 have been amended; and
- Claim 24 has been cancelled.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 6-8, 10-12, 15, 17-19, 28, 30-32, 34-36, 38-40, and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Mochizuki (US Patent No.: 6,386,720 B1).

Regarding claims 1-4, 6-8, 10-12, 15, 17-19, 28, 30-32, 34-36, 38-40, and 43, Mochizuki ('720 B1) discloses a system (Figure 5) comprising:

- a group of lamps – mounted on two end sides of the substrate 1- including different color light emitting diodes (LEDs) 5-n (Figure 5, column 3, lines 62-64); and a rectangular light guide 1 spreading the light over larger area (Figure 5, column 3, lines 20 and 35-37);

- a control unit 1000 capable of driving the colors of the LEDs 5-n in response to video signal (Figure 5, column 4, lines 61-64);
  - the lamps including a housing 4 (Figure 5, column 3, lines 54-58);
  - the LEDs 5-n mounted on a circuit board – the combination of elements 8,10 and 11 - (Figure 5, column 4, lines 4-11);
  - the lamps, including LEDs 5-n – being a grid of lamps (Figure 5); a diffuser plate – integrally moulded with the light guide substrate 1 – the diffuser plate increasing the contrast of the colors (Figure 5, column 4, lines 21-24);
  - the light from the LEDs 5-n going into end side surfaces of the light guide 1, and coming out the front of the light guide 1 (Figure 1, column 3, lines 17-24);
  - the light guide 1 including light reflecting facets (Figure 5, column 4, lines 23-27);
  - the light guide extending out from the base – one of the end side surfaces bearing LEDs 5-n being interpreted as the base – (Figure 5); and
  - a frame 4 – element 11 - holding the group of lamps 5-n (Figure 3, column 4, lines 5 and 6).
4. Claims 28, 29 and 45-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown (US Patent No.: 5,184,114).

Regarding claim 28, Brown ('114) discloses a system (Figure 7) comprising:

Art Unit: 2875

- a group of lamps 18 each including different color light emitting diodes 40 (Figures 1-3 and 7, column 4, lines 13-17 and 34, and column 5, lines 55-573, lines 62-64);
- the group of lamps 18 each including a light guide 58 spreading the light over larger area (Brown, Figure 3, column 5, lines 1-3);
- a control unit 100 capable of adjusting the intensity of the LEDs 40 (Figure 8, column 5, lines 58-68, and column 6, lines 1 and 2);
- a video processor 102 capable of providing video signals to the control unit 100 (Figure 8, column 5, lines 58-68, and column 6, lines 1 and 2); and
- the control unit 100 using subset of the pixels 18, determined by address information, in the video signal (Figure 8, column 6, lines 3-10).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki (US Patent No.: 6,386,720 B1) in view of Puttman (Video Systems; March 2002; pp: 36-43) hereinafter referred as Puttman.

Mochizuki ('720 B1) discloses a system comprising a group of lamps – mounted on two end sides of the light guide 1- the lamps including different color light emitting diodes (LEDs) linearly spaced on the end sides. However, Mochizuki ('720 B1) does not specifically teach the pitch between LED lamps being greater than 20mm.

On the other hand, Puttman teaches a display system including a plurality of LEDs spaced at the pitch greater than 20mm (page 4, column 2, second paragraph).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the display system of Mochizuki ('720 B1) by providing the LED spacing greater than 20mm as taught by Puttman for benefit and advantage of long viewing distance for the display.

7. Claims 9 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki (US Patent No.: 6,386,720 B1) in view of Lekson et al. (US Patent No.: 6,305,813 B1).

Regarding claims 9 and 37, dependent on claims 1 and 28 respectively, Mochizuki ('720 B1) discloses a system comprising a group of lamps – mounted on two end sides of the light guide - the lamps including different color light emitting diodes (LEDs) linearly spaced on the end sides. However, Mochizuki ('720 B1) does not teach the light guide including a collimator.

On the other hand, Lekson et al. ('813 B1) discloses a display device 10 (Figure 1) comprising a light guide 20 optically coupled to a collimator 32 (Figure 1, column 2, lines 59-61, and column 3, lines 66 and 67).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the display system of Mochizuki ('720 B1) by the collimator optically coupling it to the guide light as taught by Lekson et al. ('813 B1) for benefit and advantage of efficient distribution of light through the light guide.

8. Claims 13, 14, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki (US Patent No.: 6,386,720 B1) in view of Tokunaga (US Patent No.: 5,375,043).

Regarding claims 13 and 14, dependent on claims 1 and 13 respectively, and claims 41 and 42, dependent on claims 28 and 41 respectively, Mochizuki ('720 B1) discloses a system comprising a group of lamps – mounted on two end sides of the light guide - including different color light emitting diodes (LEDs) linearly spaced on the end sides. However, Mochizuki ('720 B1) does not teach the light guide forming a bulb with a center cavity for each of the LEDs.

On the other hand, Tokunaga ('043) discloses a lighting unit (Figure 1) comprising a light guide 1 forming a bulb with a center cavity receiving each of the LEDs 2a-2d – embedded in the light guide 1- (Figure 1, column 2, lines 21 and 46-48).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the display system of Mochizuki ('720 B1) by proving the light guide having the LEDs embedded init as taught by Tokunaga ('043) for benefit and advantage of efficient incidence and transmission of the light emitted by the LEDs.

9. Claims 16 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mochizuki (US Patent No.: 6,386,720 B1).

Regarding claims 16 and 44, dependent on claims 15 and 43 respectively, Mochizuki ('720 B1) discloses a system comprising a group of lamps held by a frame. However, Mochizuki ('720 B1) does not teach an additional frame containing another group of lamps.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the lighting system of Mochizuki ('720 B1) by providing more than one frame containing a lamps in groups for additional light flux for brighter illumination, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

10. Claims 20-25, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (US Patent No.: 5,184,114) in view Puttman (Video Systems; March 2002; pp: 36-43) hereinafter referred as Puttman.

The prior art Puttman included in the IDS filed on November 3, 2003.

Regarding claim 20, Brown ('114) discloses a system (Figure 7) comprising:

- a group of lamps 18 each including different color light emitting diodes 40 (Figures 1-3 and 7, column 4, lines 13-17 and 34, and column 5, lines 55-573, lines 62-64);
- a control unit 102 driving the colors of the LEDs 40 (Figure 8, column 5, lines 58-68, and column 6, lines 1 and 2); and
- the LEDs 40 being placed at close interval depending on the size of array of LEDs for a pre-determined size of a pixel (Figure 7, column 2, lines 21-27).



However, Brown ('114) does not specifically teach the pitch between LED lamps being greater than 20mm.

On the other hand, Puttman teaches a display system including a plurality of LEDs spaced at the pitch greater than 20mm (page 4, column 2, second paragraph)

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the display system of Brown ('114) by providing the LED spacing greater than 20mm as taught by Puttman for benefit and advantage of long viewing distance for the display.

Regarding claims 21-25, Brown ('114) in view of Puttman discloses the system further including:

a light guide 58 spreading the light over larger area (Brown, Figure 3, column 5, lines 1-3), and light from different colored LEDs mixing in the light guide 58 (Brown, Figure 3, column 4, lines 3-6);

- the lamps 18 being grid of lamps (Brown, Figure 7);
- as best understood, the different colored LEDs 40 being of large size LEDs adapted for greater than 20mm pitch (Puttman, page 4, column 2, second paragraph); and
- the LEDs 40 clustered on a lamp 18 being driven with the same signal to create a single pixel (Figure 8, column 4, lines 16-20, column 6, lines 3-10 and 16-20).

Regarding claim 33, dependent on Claim 28, Brown ('114) discloses a system (Figure 7) comprising LEDs being placed at close interval depending on the size of array of LEDs for a pre-determined size of a pixel.

However, Brown ('114) does not specifically teach the pitch between LED lamps being greater than 20mm.

On the other hand, Puttman teaches a display system including a plurality of LEDs spaced at the pitch greater than 20mm (page 4, column 2, second paragraph)

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the display system of Brown ('114) by providing the LED spacing greater than 20mm as taught by Puttman for benefit and advantage of long viewing distance of the display.

11. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown (US Patent No.: 5,184,114) in view Puttman (Video Systems; March 2002; pp: 36-43) as applied to claim 20 above, and further in view of Sheu et al. (US Patent No.: 6,522,066).

Regarding claims 26 and 27, Brown ('114) in view of Puttman discloses a display system comprising a plurality of lamps each having a pixel with LEDs emitting different color light. However, neither combined nor individual teaching of Brown ('114) and Puttman specifically discloses the LEDs being either polymer LEDs or organic LEDs.

On the other hand, Sheu et al. ('066) discloses pixel structure for display device, and the pixel structure using organic LEDs or polymer LEDs (Abstract, column 2, lines 46-49).

Regarding Claim 26, it would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the display system of Brown ('114) in view of Puttman by providing the organic LED for benefit and advantage high intensity light – as compare to the polymer LEDs - emitted by a compact light source operating at high energy efficiency for display panels.

Regarding Claim 27, it would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the display system of Brown ('114) in view of Puttman by providing the polymer LED for benefit and advantage light emitted by a compact light source operating at high energy efficiency for display panels.

### ***Response to Amendment***

12. Applicant's arguments filed on May 9, 2005 with respect to the 35 U.S.C. 102(b) rejections of claims 1-4, 6-8, 10-12, 15, 17-19, 28-32, 34-36, 38-40, 43 and 45-47; and the 35 U.S.C, 103(a) rejections of claims 5, 9, 13, 14, 16, 20-27, 33, 37, 41, 42 and 44 have been fully considered but they are not persuasive.

Argument: Regarding claims 1-4, 6-8, 10-12, 15, 17-19, 28-32, 34-36, 38-40, 43 and 45-47, Mochizuki ('720 B1) does not discloses a control unit which adjusts or drives LEDs in accordance with a video signal.

Response: The limitation " a control unit adapted to drive the colors of the lamp in accordance with a video signal" is not a positive limitation but only enquires the ability to perform.

Mochizuki ('720 B1) discloses a system (Figure 5) comprising a control unit 1000 capable of driving the colors of the LEDs 5-n in response to video signal (Figure 5, column 4, lines 61-64). In addition, Mochizuki ('720 B1) teaches the controller 1000 adjusting the luminance each of the colored LEDs (Figure 5, column 4, lines 16-21 and 61-64).

Argument: Regarding claims 1 and 17-19, Yamazaki et al. (US Patent No.: 6,597,348 B1) does not teach an LED backlight receiving the video signals. Instead, the LCD panel receives video signals to block different portions of the LED backlight.

Response: The examiner concurs with the applicants understanding of Yamazaki et al. (US Patent No.: 6,597,348 B1) with respect to the limitations. Therefore, this office action does not include Yamazaki et al. (US Patent No.: 6,597,348 B1) as the prior art for rejections of claims 1 and 17-19.

Argument: Regarding claims 20-25, 26-29, 33, and 45-47; Brown ('114) discloses a system including a group of lamps each including a lens spreading light on a large area. The lens of the brown's device cannot be considered to be a light guide. Therefore Brown neither anticipates nor teaches a light guide included in each of the lamps as claimed by the applicant.

Response: The authoritative Dictionary of IEEE Standard Terms, seventh edition; Pub. 2000; defines light guide or optical wave guide as "Any structure capable of guiding optical power"

Based on the above-indicated definition, the lens used in Brown' device has been broadly interrelated as light guide.

### ***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hargobind S. Sawhney whose telephone number is 571 272 2380. The examiner can normally be reached on 6:15 - 2:45.

Art Unit: 2875

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571 272 2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HSS  
7/12/05

  
Stephen Husar  
Primary Examiner